



# REPLACEMENT SHEET

Title: TRIP-POINT DETECTION CIRCUIT

Inventors: Vladislav Potanin et al.

Application No.: 10/810,120

Docket No.: 50019.274US01/P05781

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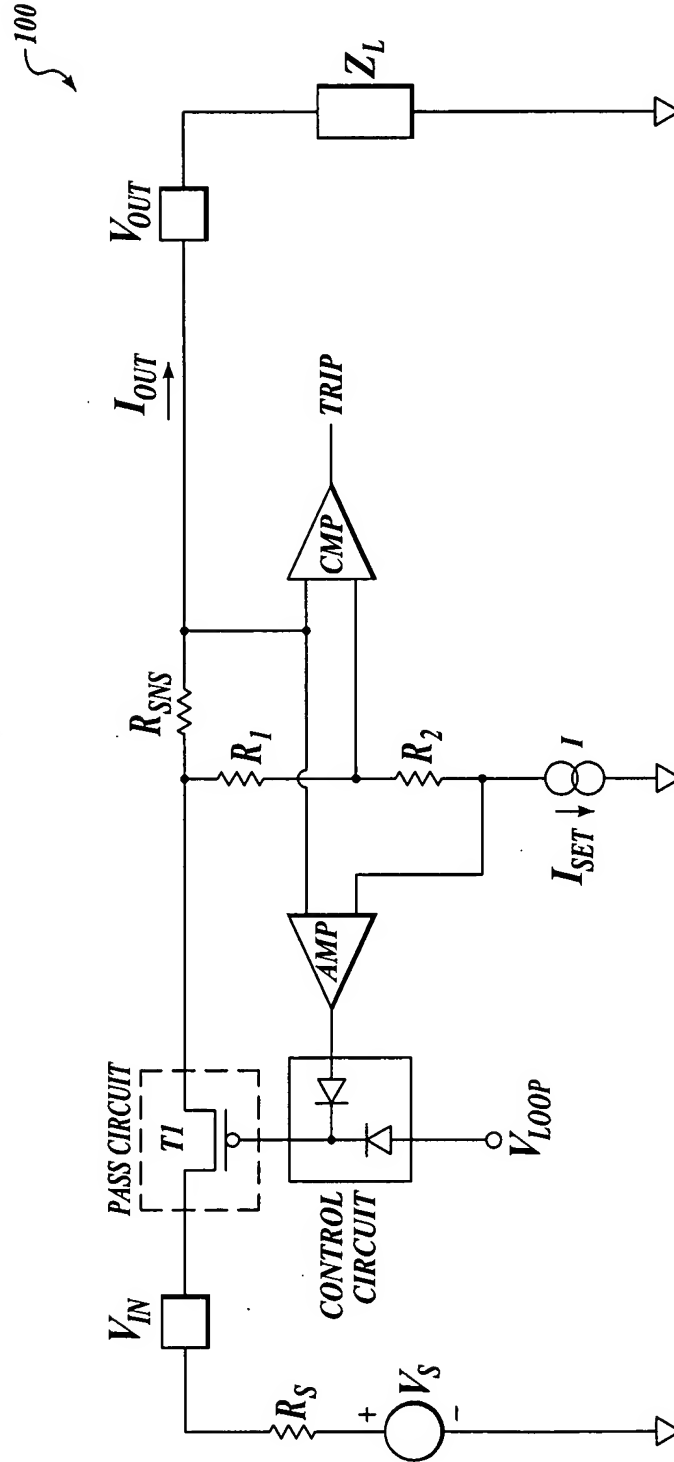


FIGURE 1

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The diagram illustrates a current-mode control system for a power converter, designated as 200. The system consists of several interconnected blocks and components:

- Power Stage:** A power MOSFET  $T1$  (labeled PASS CIRCUIT) is driven by a **CONTROL CIRCUIT**. The input voltage  $V_{IN}$  is applied to the gate of  $T1$ . The output of the power stage is the output voltage  $V_{OUT}$  and output current  $I_{OUT}$ .
- Current Source:** A **CONTROLLED CURRENT SOURCE**  $T2$  is connected to the output of the power stage. It is controlled by a **CONTROL CIRCUIT** and a **TRIP** signal. The current source is labeled  $I_{SET}$  and  $I$ .
- Feedback and Control:**
  - A sense resistor  $R_{SNS}$  is placed in the output path to sense the output current  $I_{OUT}$ . The voltage drop across it is  $V_D$ .
  - A feedback resistor  $R_{FB1}$  connects the output current  $I_{OUT}$  to the non-inverting input of a **CMP** (comparator).
  - A feedback resistor  $R_{FB2}$  connects the output voltage  $V_{OUT}$  to the non-inverting input of an **AMP2** (amplifier).
  - A reference voltage  $V_{REF}$  is applied to the inverting input of **AMP2**.
  - The output of **AMP2** is  $V_C$ , which is connected to the gate of  $T2$ .
  - The output of the **CMP** is **TRIP**, which is connected to the **CONTROL CIRCUIT**.
  - The **CONTROL CIRCUIT** also receives a **CTL** (current limit) signal and controls the gate of  $T1$ .
- Other Components:** Resistors  $R_1$  and  $R_2$  are connected to the gates of  $T1$  and  $T2$  respectively. A current  $I_C$  is shown flowing into the gate of  $T2$ .

**FIGURE 2**

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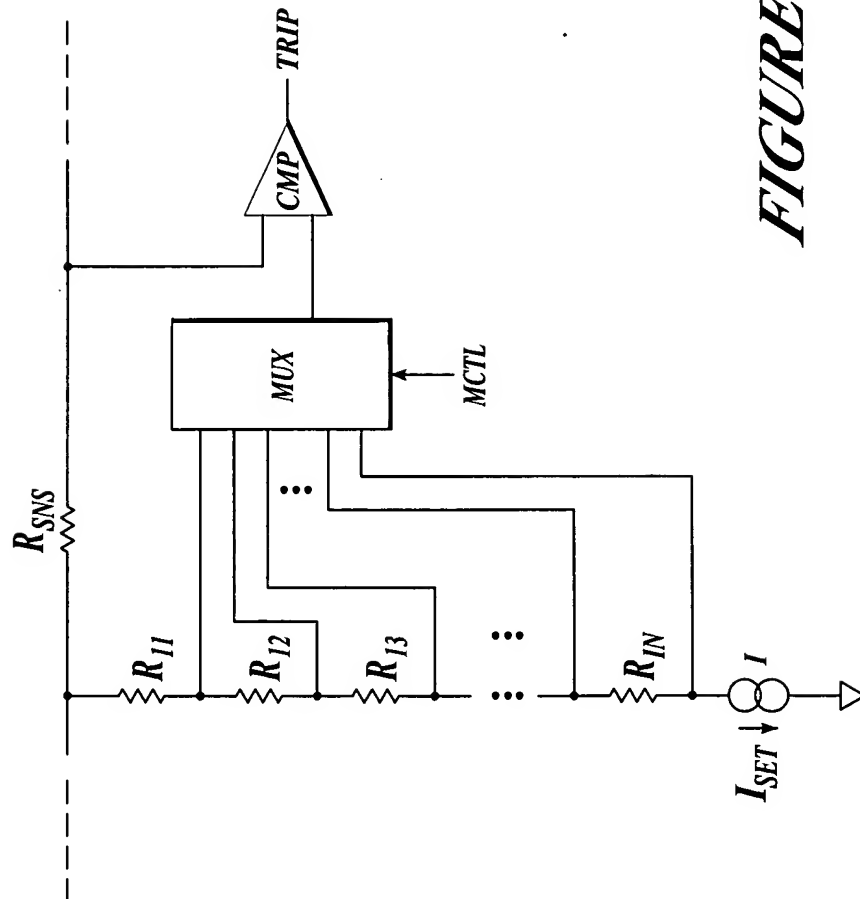
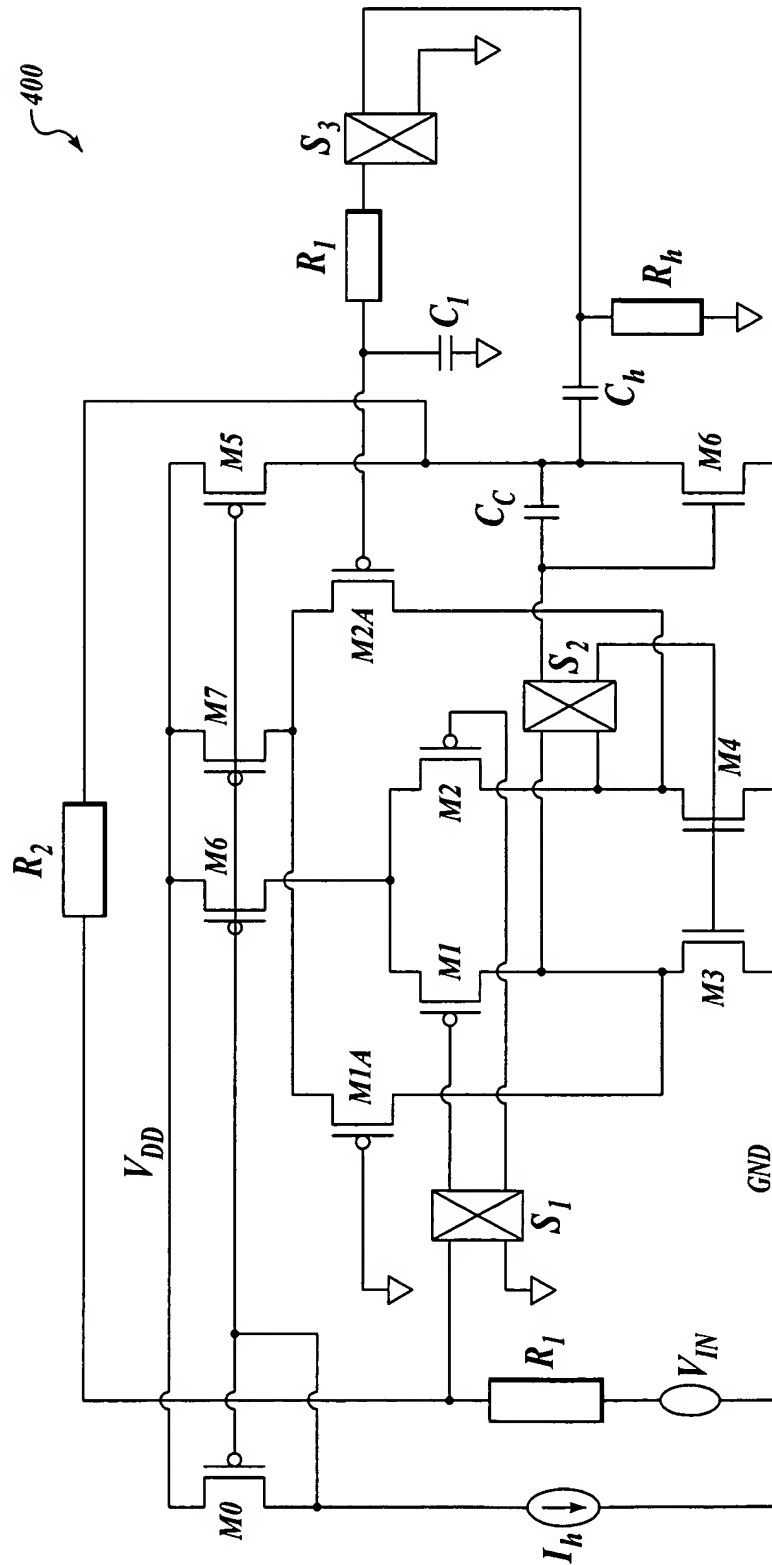


FIGURE 3

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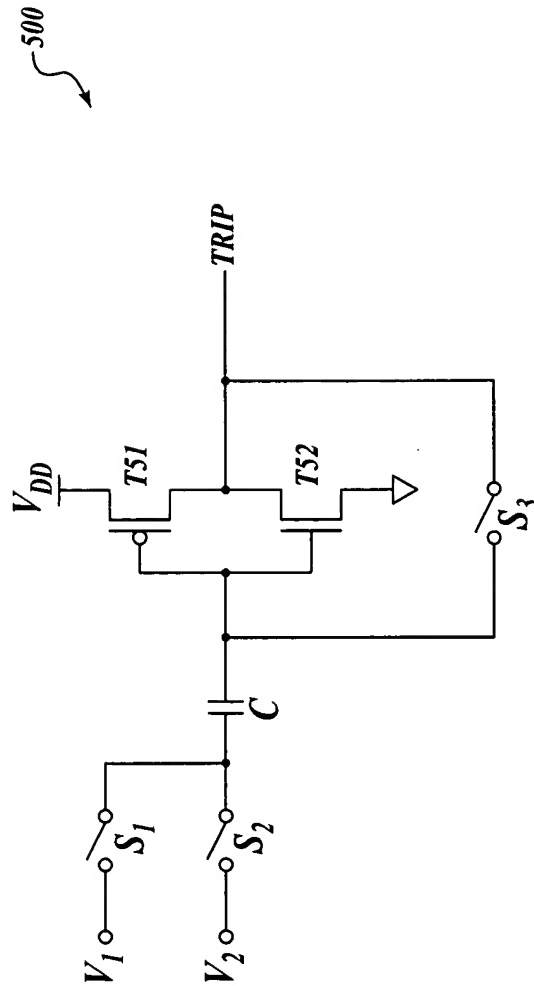
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**FIGURE 5**

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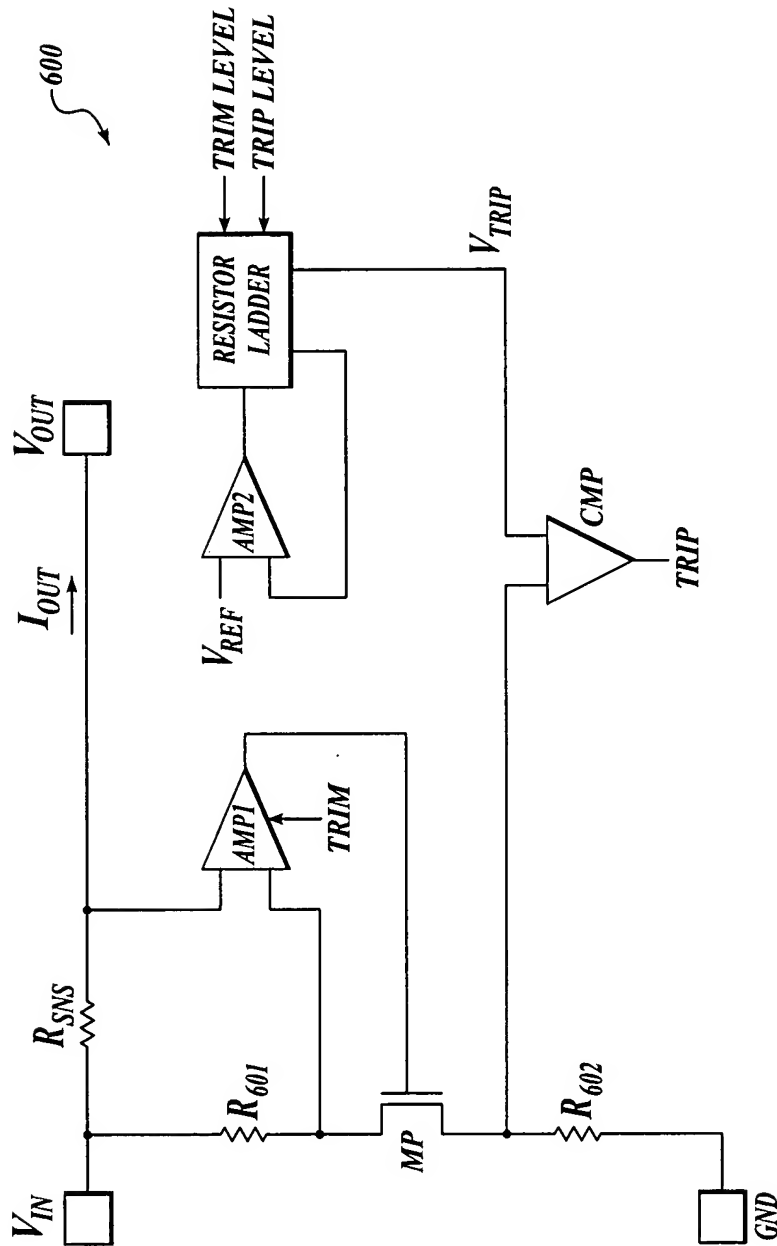
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**FIGURE 6** (PRIOR ART)